

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A method for georeferencing a raster map, comprising:

displaying a first map and a second map, the first map being a digital raster map, having a plurality of pixel locations, and the second map being a previously georeferenced map, having associated geographic coordinates, wherein the first map is similar to the second map, each pixel location includes an associated x-coordinate and y-coordinate, and each geographic coordinate includes an associated longitude coordinate and an associated latitude coordinate;

receiving an entry identifying a first point pair ~~on the first map~~, wherein the ~~first point is a pixel location having an x-coordinate and a y-coordinate~~ a first pixel location on the first map is associated with a first geographic coordinate on the second map and the first pixel location is located at a position on the first map analogous to the first geographic coordinate on the second map;

receiving an entry identifying a second point pair ~~on the second map~~, the ~~second point having approximately the same location on the second map as the first point has on the first map~~, wherein a second pixel location on the first map is associated with a second geographic coordinate on the second map and the second pixel location is located at a position on the first map analogous to the second geographic coordinate on the second map;

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~~assigning the point on the first map a longitude coordinate and a latitude coordinate, the longitude coordinate and the latitude coordinate of the first point being identical to a longitude coordinate and a latitude coordinate associated with the point on the second map; and to the first pixel location the longitude coordinate and the latitude coordinate associated with the first geographic coordinate;~~

assigning to the second pixel location the longitude coordinate and the latitude coordinate associated with the second geographic coordinate; and

creating a mathematical georeferencing function for assigning appropriate geographic coordinates to any one of the plurality of pixel locations to define a relationship between a pixel location on the first map and a longitude coordinate and a latitude coordinate on the second map.

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2. (Original) The method of claim 1 wherein the second map is a vector map.
 3. (Original) The method of claim 1 wherein the second map is a digital raster map.
 4. (Previously Presented) The method of claim 1 wherein the point on the first map has a previously determined longitude and latitude.
 5. (Canceled)
 6. (Currently Amended) The method of claim ~~[[5]]~~ 1 wherein the georeferencing function is a linear transformation.

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7. (Original) The method of claim 1 further comprising selectively synchronizing, responsive to a user command, the first map and the second map.
8. (Original) The method of claim 1 further comprising receiving a mark on the first map at a location, and reproducing the mark on the second map at a corresponding location.
9. (Currently Amended) The method of claim ~~[[5]]~~ 1 wherein the georeferencing uses at least three point pairs to complete the georeferencing function for the first map based on a linear transformation.
10. (Currently Amended) The method of claim ~~[[5]]~~ 1 further comprising using at least four point pairs to complete the georeferencing function for the first map, based on a linear transformation, and further comprising executing a validation check.
11. (Currently Amended) The method of claim 10 further comprising rejecting a one of the point pairs when an error associated with the one point pair deviates a pre-determined amount from a ~~pre-determined~~ standard error computed using the other point pairs.
12. (Original) The method of claim 11 wherein the ~~predetermined~~ standard error uses a "least square" parameter fitting operation.
13. (Previously Presented) The method of claim 1 further comprising:
receiving a selection of a point on the first map, and
receiving a selection of a point on the second map.

14. (Currently Amended) An apparatus for georeferencing a raster map, the apparatus comprising:

means for displaying a first map and a second map, the first map being a digital raster map, having a plurality of pixel locations, and the second map being a previously georeferenced map, having associated geographic coordinates, wherein the first map is similar to the second map, each pixel location includes an associated x-coordinate and y-coordinate, and each geographic coordinate includes an associated longitude coordinate and an associated latitude coordinate;

means for receiving an entry identifying a first point pair ~~on the first map~~, wherein the first point is ~~a pixel location having an x-coordinate and a y-coordinate~~ a first pixel location on the first map is associated with a first geographic coordinate on the second map and the first pixel location is located at a position on the first map analogous to the first geographic coordinate on the second map;

means for receiving an entry identifying a second point pair ~~on the second map~~, the second point having ~~approximately the same location on the second map as the first point has on the first map~~, wherein a second pixel location on the first map is associated with a second geographic coordinate on the second map and the second pixel location is located at a position on the first map analogous to the second geographic coordinate on the second map;

means for assigning ~~the point on the first map a longitude coordinate and a latitude coordinate, the longitude coordinate and the latitude coordinate of the first point being identical to a longitude coordinate and a latitude coordinate associated with~~

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~~the point on the second map; and to the first pixel location the longitude coordinate and the latitude coordinate associated with the first geographic coordinate;~~

means for assigning to the second pixel location the longitude coordinate and the latitude coordinate associated with the second geographic coordinate; and

means for creating a mathematical georeferencing function to assign appropriate geographic coordinates to any one of the plurality of pixel locations to define a relationship between a pixel location on the first map and a longitude coordinate and a latitude coordinate on the second map.

15. (Canceled)

16. (Previously Presented) The apparatus of claim 14 further comprising means for receiving a mark on the first map at a location, and reproducing the mark on the second map at a corresponding location.

17. (Previously Presented) The apparatus of claim 14 further comprising means for using at least four point pairs to compute a georeferencing function for the first map based on a linear transformation, and further comprising executing a validation check.

18. (Previously Presented) The apparatus of claim 17 further comprising means for rejecting one of the point pairs when an error associated with the one point pair deviates a predetermined amount from a predetermined standard error computed using the other point pairs.

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19. (Currently Amended) A computer readable medium containing instructions executable by a computer to perform a method to georeference a raster map, the method comprising:

displaying a first map and a second map, the first map being a digital raster map, having a plurality of pixel locations, and the second map being a previously georeferenced map, having associated geographic coordinates, wherein the first map is similar to the second map, each pixel location includes an associated x-coordinate and y-coordinate, and each geographic coordinate includes an associated longitude coordinate and an associated latitude coordinate;

receiving an entry identifying a first point pair on the first map, wherein the first point is a pixel location having an x-coordinate and a y-coordinate a first pixel location on the first map is associated with a first geographic coordinate on the second map and the first pixel location is located at a position on the first map analogous to the first geographic coordinate on the second map;

receiving an entry identifying a second point pair on the second map, the second point having approximately the same location on the second map as the first point has on the first map, wherein a second pixel location on the first map is associated with a second geographic coordinate on the second map and the second pixel location is located at a position on the first map analogous to the second geographic coordinate on the second map;

assigning the point on the first map a longitude coordinate and a latitude coordinate, the longitude coordinate and the latitude coordinate of the first point being identical to a longitude coordinate and a latitude coordinate associated with the point on

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~~the second map; and to the first pixel location the longitude coordinate and the latitude coordinate associated with the first geographic coordinate;~~

~~assigning to the second pixel location the longitude coordinate and the latitude coordinate associated with the second geographic coordinate; and~~

~~creating a mathematical georeferencing function for assigning appropriate geographic coordinates to any one of the plurality of pixel locations to define a relationship between a pixel location on the first map and a longitude coordinate and a latitude coordinate on the second map.~~

20. (Previously Presented) The computer-readable medium of claim 19 further comprising:

using at least four point pairs to compute a georeferencing function for the first map based on a linear transformation;

further comprising executing a validation check; and

rejecting [[a]] one of the point pairs when an error associated with the one point pair deviates a predetermined amount from a predetermined standard error computed using the other point pairs.

21. (New) The method of claim 9, wherein a polygon, formed by the outline of widely dispersed point pairs, covers a substantial portion of the first map so that an accuracy of the georeferencing function is increased.

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